

W order ID 129384

March-03-15 7:49:58 AM

129384

Page 1

Item ID: D119-646-113 Accept *N900040100* Setup Start *NS1*

Revision ID:

Item Name: Skidtube LH with Wearplates & Wearpads, DART (Apical) Tri-Bag Float Compatible Stop *NS2*

Start Date: 2/05/15 Start Qty: 1.00 *1* Cust Item ID:

Required Date: 2/06/15 Req'd Qty: 1.00 *1* Customer:

Reference: ECN 14-628

Approvals: Process Plan: Date: Tooling: Date: Run Start *NR1*

QC: Date: SPC (Y/N): Date: Stop *NR2*

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
Draw Nbr	Revision Nbr								
IIN-D119-646	C								

105 0.00

105

Packaging

Packaging

Memo

PULL FROM STOCK
D119-646-113 X1
B: 92607

CHG003

ADD DSI 9685-011
AS PER ECN 14-628

DAS
27
9-89

15-2-27

SEP 20 2017

108 0.00

108

Skidtubes

Skidtubes

Memo

REWORK PER RS1015
A/R

15-3-5

DART			
Dart Aerospace Ltd.			
1270 ABERDEEN ST.			
HAWKESBURY, ON, CANADA K6A 1K7			
P/N		D119-646-113	CHG
DESC.		Float Skidtube, LH	STC
LOT		B92607	STC
MODEL		Agusta A119/AW119MKII	STC
PATENTS: US #5735484 / CA #2222184		TC APPROVAL # 09-89	
EUROPEAN No. # 0828655		TEL: 1-613-632-5200	
MADE IN CANADA		D2729-2	

B129384LH

Work Order ID 129384

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Page 2

Item ID: D119-646-113 Accept ***N900040100*** Setup Start ***NS1***
 Revision ID: Stop ***NS2***
 Item Name: Skidtube LH with Wearplates & Wearpads, DART (Apical) Tri-Bag Float Compatible
 Start Date: 2/05/15 Start Qty: 1.00 ***1*** Cust Item ID:
 Required Date: 2/06/15 Req'd Qty: 1.00 ***1*** Customer:
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Approvals: Process Plan: _____ Date: _____ Tooling: _____ Date: _____ Run Start ***NR1***
 QC: _____ Date: _____ SPC (Y/N): _____ Date: _____ Stop ***NR2***

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
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112	QC5- Inspect part completeness to step on W/O	0.00							
112									
QC	Memo	0.00							
Quality Control									

See RS1015

PTO [Signature]

113		0.00							
113									
HandFinish	Memo	0.00							
Hand Finishing	RE-ALODINE/TOUCH UP POWDER COAT A/R								

1 LH 1 20 12/04/16

114	QC3- Inspect Part Finish	0.00							
114									
QC	Memo	0.00							
Quality Control									

** 116 Spray Paint*

*Primer 137855
Paint 137852*

1

DAS
41
9-89
JUL 27 2017

** 117 QC14*

DQA: _____ Date: _____



WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____	DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐	AGAINST DEPARTMENT/PROCESS <table style="width: 100%;"> <tr> <td>Skid-tube ☐</td> <td>Crosstube ☐</td> <td>Water Jet ☐</td> <td>Engineering ☐</td> </tr> <tr> <td>Machining ☐</td> <td>Small Fab ☐</td> <td>Prod. Eng. Coord. ☐</td> <td>Quality ☐</td> </tr> <tr> <td>Thermoforming ☐</td> <td>Finishing ☐</td> <td>Rec/Store/Packaging ☐</td> <td>Other ☐</td> </tr> <tr> <td>Large Fab ☐</td> <td>Composite ☐</td> <td>Supplier ☐</td> <td></td> </tr> </table>	Skid-tube ☐	Crosstube ☐	Water Jet ☐	Engineering ☐	Machining ☐	Small Fab ☐	Prod. Eng. Coord. ☐	Quality ☐	Thermoforming ☐	Finishing ☐	Rec/Store/Packaging ☐	Other ☐	Large Fab ☐	Composite ☐	Supplier ☐	
Skid-tube ☐	Crosstube ☐	Water Jet ☐	Engineering ☐															
Machining ☐	Small Fab ☐	Prod. Eng. Coord. ☐	Quality ☐															
Thermoforming ☐	Finishing ☐	Rec/Store/Packaging ☐	Other ☐															
Large Fab ☐	Composite ☐	Supplier ☐																

Root Cause	Date	Step	Qty	Description of work order update or non-conformance	Initial Chief Eng	Action Description	Sign & Date	Verification	QC Inspector
Design									
Doc/Data									
Equip/Tooling									
Handling/Pre									
Material									
Operator									
Offset/Setup									
Process									
Supplier									
Training									
Transport									
Unapproved									

FAULT CATEGORY

Landing Gear ☐ Bending ☐ Centre Not Concentric ☐ Cracks ☐ Crimp/Kink/Ripple/Wave ☐ Cuffs ☐ Crushing ☐ Heat Treat ☐ Inspection Strip in Tube ☐ Marks/Chatter ☐ Turning Sequence ☐ Wave/Twist in Tube	General ☐ Bend ☐ BOM/Route ☐ Broken/Damage/Defect ☐ Burrs ☐ Contamination ☐ Countersink ☐ Cut Too Short ☐ Drawing ☐ Drill Holes ☐ Finish ☐ Fit/Function	☐ Folio/Program ☐ Grain ☐ Hardware ☐ Inspection Incomplete/Unqualified ☐ Instructions Incomplete/Unclear ☐ Misaligned/off center ☐ Mislabeled ☐ Misread ☐ Off-set ☐ Out of Calibration ☐ Out of Sequence	☐ Outside Dimensions ☐ Over/Under tolerance ☐ Part Incorrect ☐ Part Lost/Missing ☐ Part Moved ☐ Positioned Wrong ☐ Power Loss/Surge ☐ Pressure/Forced ☐ Set-up ☐ Temperature/Cure ☐ Weld ☐ Wrong Stock Pulled ☐ Other
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DART AEROSPACE LTD		Work Order: 129384
Description: Repair Scheme D119-646-241 Skid tubes FWD GHW holes do not align NCR 14-3771 For tubes in production and Returned tubes		
Drawing: D3887	Repair Scheme:	RS1015
Part No: D119-646-241	Page:	1 of 1
Batch No:	Qty:	1

Step	Location	Procedure	By	Date	Qty
1	Finishing	Remove FWD & AFT caps D2855-3. Clean all sikaflex off cap & identify per each tube caps was removed (P/N & B#)			
2	Skidtube	Drill out & remove FWD Cross bolt spacers D2579 in Detail C on Dwg D3887	DP	15-3-5	1
3	Skidtube	Reposition location of holes as per Drawing but using <u>+/-0.005" tol</u> and per symmetrical in QSI 018	DP	15-3-5	1
4	Skidtube	TACK ONLY Cross bolt spacers D2579 B <u>12399712</u>	BE	15-03-18	1
5	QC	Location MUST be verified by QC Record Dims HERE	DAS 9 1-89	15-03-18	1
6	Skidtube	Weld as per QSI 004 A/R <u>11127865</u> Back Drill Grind welds flush & deburr	BE	15-03-18	1
7	QC	QC 10 & 5 Inspection ***TEST FIT GHW WHEELS*** Pass ☐	DAS 9 9-89	15-03-15	1
8	Purchasing	Send tube to be striped as per QSI004 PO# <u>29548</u>	CY	15-08-21	1
9	Receiving	Receive & Inspect for Damage & Material certs	SL	15-08-28	1
10	QC	QC 6 Inspect For Damage and reverify that certs match	DP	15-09-01	1
11	Finishing	Touch up alodine as per QSI 005 <u>Re-alodine</u>	DP	15-9-8	1
12	Finishing	Re-Powder coat per QSI 005 <u>Prime and Paint as per dwg 13905 Rev D</u> <u>Prime 137855 / Paint 137852</u>	DAS 41 9-89	JUL 27 2017	
13	Finishing	Re-assemble original caps back on tubes Sikaflex B <u>1133416</u> exp <u>1863</u>	DAS 15 9-89	15-08-16	1
14	QC	QC 3 inspect			
15	QC	QC 5 inspect			
16	QC	QC21			

NCR First

Rev	Date	Change Description	Prepared	Checked	Approved
B	14.10.21	New Issue	ED		

Work Order ID 129384

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Page 3

Item ID: D119-646-113 Accept ***N900040100*** Setup Start ***NS1***
Revision ID: Stop ***NS2***
Item Name: Skidtube LH with Wearplates & Wearpads, DART (Apical) Tri-Bag Float Compatible
Start Date: 2/05/15 Start Qty: 1.00 ***1*** Cust Item ID:
Required Date: 2/06/15 Req'd Qty: 1.00 ***1*** Customer:
Reference: ECN 14-628

Approvals: Process Plan: _____ Date: _____ Tooling: _____ Date: _____ Run Start ***NR1***
QC: _____ Date: _____ SPC (Y/N): _____ Date: _____ Stop ***NR2***

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
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115	QC4- 100% Inspect kits for completeness	0.00							
115									
QC	Memo	0.00							
Quality Control									

DAS
27
9-89
SEP 20 2017

125	ADD to kit 8 x AN3C50A B 135980	0.00							
125									
Packaging	Memo	0.00							
Packaging	REPACKAGE USING NEW B/N PRINT NEW LABELS DSI KIT PAPER-WORK REQUIRED								

OCT 25 2016

DAS
27
9-89
SEP 20 2017

140	QC21- Final Inspection - Work Order Release	0.00							
140									
QC	Memo	0.00							
Quality Control									

SEP 21 2017

Picklist Print

Thursday, February 05, 2015 12:51:56 PM

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Work Order ID: 129384

129384

Parent Item: D119-646-113

D119-646-113

Parent Item Name: Skidtube LH with Wearplates & Wearpads, DART (Apical) Tri-Bag Float Compatible

Start Date: 2/05/15

Required Date: 2/06/15

Start Qty: 1.00

Required Qty: 1.00

Comments: IPP RevA: New issue DD verified by:EC IPP REV:B
12.11.05 raise to chg002 (ECN 12-675) DD verf:JLM IPP REV:C 13.03.20
raise to chg003 (ECN 13-534) DD verf:JLM IPP REV:D 14.11.25 chg004
(ECN 14-628) DD verf:JLM

Component Item ID/ Item Name	Replacement Item ID	Mfg/ Purch	Bin Item	Primary Location	Last Location	Route Seq ID	Unit of Measure	Qty on Hand	Qty per Kit	Total Qty	Qty Issued	Date Issued	Status
D119-646-113		Manufactured	No				Each	0.0000		1			
D119-646-113									**	92607		15-2-5	
Skidtube LH with Wearplates & Wearpads, DART (Apical) Tri-Bag Float Compatible													
DSI 9685-011		Manufactured	No				Each	0.0000		1			
DSI 9685-011									**	B147684		Smb	
Crossbolt Spacer Installation													17/9/00

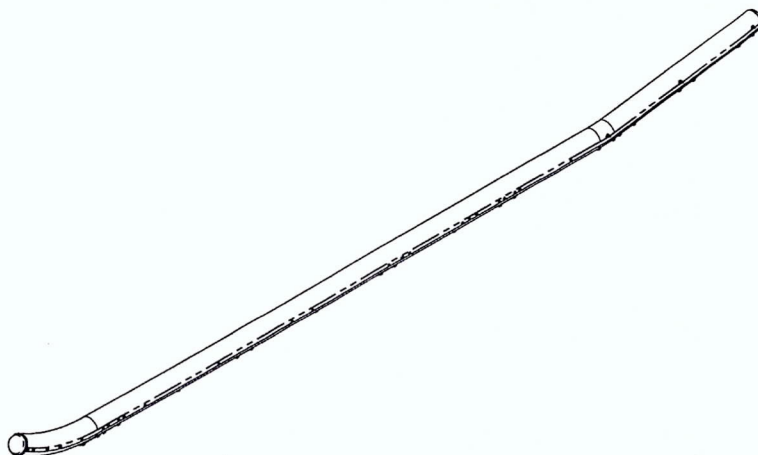
DAS
28
9-89

Part For Assembly

PART NO:	BATCH NO:	QTY:
D3847-043	B153533	1
D3847-045	B153474	1
D3847-049	B139750	1
D3847-1	B161947	6
D3847-1	B153503	2
D3847-11	B159114	1
AN3C-5A	M137963	x42
NAS1149C0332R	M137851	x44
D3672-1	M150074	x2
MS24694-C52	M135978	x2
D2855-3	B153291	x2
D5101-041	B140171	x2
D5101-047	B159549 B164593	x1
D5101-5	B153084	x6
D5101-3	B141362	x6
AN4C46A	M137316	x3
NAS1149C046R		
NAS1149C0463R	M137736	x3 x6
M1521043-4	M1378006	x3

D 119-646-113 / B129384

S 2348.0



D3905-041 FLOAT SKIDTUBE ASSY WITH WEARPAD (SHOWN)
D3905-043 FLOAT SKIDTUBE ASSY WITH WEARPLATE (SIMILAR)
D3905-045 FLOAT SKIDTUBE ASSY WITH TRAINING WEARPLATE (SIMILAR)

NOTES:

- 1) MATERIAL: N/A
- 2) FINISH: CHEMICAL CONVERSION COAT PER DART QSI 005 4.1 PRIOR TO INSERTING D3885-3 FLOAT WEB PRIME (REF. 4.2.1.3.3) AND PAINT WHITE PER DART QSI 005 4.2 BLACK ANTI-SKID PAINT AS INDICATED TO 0.5 ABOVE LOCATION RIDGE PER DART QSI 005 4.4
- 3) TOLERANCES: PER DART QSI 018 UNLESS OTHERWISE NOTED
- 4) UNITS: INCHES UNLESS OTHERWISE NOTED
- 5) BREAK SHARP EDGES: 0.005 TO 0.010 MAX
- 6) IDENTIFICATION: NONE
- 7) WEIGHT: D3905-041 = 35.4 lbs
D3905-043 = 42.8 lbs
D3905-045 = 48.0 lbs
- 8) WELD PER DART QSI 004
- 9) DAMAGE TOLERANCE ON FWD BEND:
THERE SHOULD BE NO VISIBLE WRINKLES IN THE BEND FROM THE GROUND TO A HEIGHT OF 8.5 INCHES ABOVE THE GROUND. IT IS ACCEPTABLE TO POLISH OUT GOUGES UP 0.020" DEEP IN THE BENT PORTION OF THE TUBE. A MAXIMUM REDUCTION IN DIAMETER OF 0.150" IS ACCEPTABLE IN THE BENT PORTION OF THE TUBE.
- 10) INSERT D3885-3 WEB TO LOCATION SHOWN OFF AFT END OF SKIDTUBE AND BOND WEB INTO OUTER TUBE WITH SIKAFLEX-241/-291 ADHESIVE PER DART QSI 015 BEFORE BENDING. ENSURE HOLES LINE-UP
- 11) INSERT D3492-045 PLUG ASSY INTO $\phi 0.197$ HOLES (BOTH SIDES OF TUBE)
- 12) USE DART DRILL TEMPLATE DT8932 TO LOCATE AND DRILL $\phi 0.297$ HOLES FOR WEARPLATE INSERTS. INSTALL AELS-1032-130 INTO D3905-11 ONLY. INSTALL AN3C5A BOLTS AND NAS1149C0332R WASHERS WITH SIKAFLEX-241/-291.

ITEM	QTY -041	QTY -043	QTY -045	P/N	DESCRIPTION
1	X			D3905-041	FLOAT SKIDTUBE ASSY WITH WEARPAD
2		X		D3905-043	FLOAT SKIDTUBE ASSY WITH WEARPLATE
3			X	D3905-045	FLOAT SKIDTUBE ASSY WITH TRAINING WEARPLATE
10	2	2	2	D2579	CROSS BOLT SPACER
11	2	2	2	D2855-3	CAP
12			16	D3411-3	WASHER
13	16	16		D3492-045	PLUG ASSY
14	2	2	2	D3672-1	PHENOLIC WASHER
15	8	8	8	D3681-1	SPACER
16	8	8	1	D3847-1	WEARPAD
17	1	1	1	D3847-11	WEARPAD
18		1		D3847-043	FWD WEARPLATE ASSY
19		1		D3847-045	CENTER WEARPLATE ASSY
20		1		D3847-049	AFT WEARPLATE ASSY
21			1	D3849-045	AFT WEARPLATE ASSY
22			1	D3849-047	FWD WEARPLATE ASSY
23	1	1	1	D3885-3	FLOAT WEB
24	12	12	12	D3903-1	SPACER
25			16	D3904-1	WASHER
26	1	1		D3905-11	FLOAT SKIDTUBE
27			1	D3905-13	FLOAT SKIDTUBE
28	6	6	6	D5101-3	INSERT
29	6	6	6	D5101-5	INSERT
30	3	3	3	D5101-041	CROSSBOLT SPACER ASSY
41	42	42	10	ALS4-1032-130	INSERT
42	44	44	12	AN3C5A	BOLT
43			4	AN3C46A	BOLT
44			4	AN3C50A	BOLT
45	3	3	3	AN4C46A	BOLT
46	44	44	8	NAS1149C0332R	WASHER (OR AN960C10L)
47	12	12	12	NAS1149C0463R	WASHER (OR AN960C416)
48	6	6	6	NAS1149D0416J	WASHER
49			8	MS21043-3	NUT
50	3	3	3	MS21043-4	NUT
51	2	2	2	MS24694-C52	SCREW

UNDER REVIEW

15.04.30 URF15-560 AP

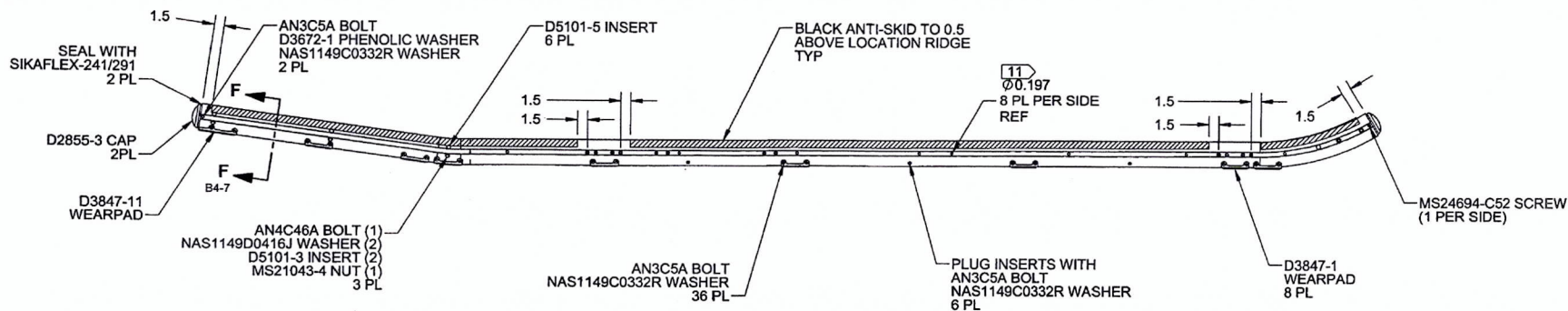
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2014 NOV 24

ECN 14-828

D	REVISED DIMENSIONS AND PROVIDED TOLERANCE TO SKIDTUBE OVERALL LENGTH PAGE 5-6 REVISED NOTE 2 AND NOTE 7 PAGE 1 (ZN B8, ZN A8-1) REVISED -041/-043/-045 DRAWING VIEWS, REVISED SECTION VIEW F-F (ZN B4-7), REVISED BOM REF. PART13-299 AND PART13-272	AK	14.08.08
C	(SHT 1 PIL, ZN C2-2, C2-3, C2-4) ITEM 13, QTY 2 WAS 4, ITEM 42 AND 45, QTY 44 WAS 46, ADD ITEM 49, MS24694-C52 WAS AN3C5A, D3672-1 AND NAS1149C0332R, (ZN C7-7) $\phi 0.201$ CSK $\phi 0.385 \times 100$ WAS $\phi 0.204$ THRU, (ZN A4-5, A4-6) ADD RELIEF INSTRUCTION, ADD ITEM 10, CROSS BOLT SPACER (ZN D4-1, C6-7, D8-7)	DB	13.02.21
B	REVISED PART LIST, ALS4-1032-130 WAS AELS-1032-130 (ZN A6-5, A5-6, C5-7, C3-7, A5-7); ADD DT8932 (ZN A8-1); D2855-3 WAS D2575 (ZN C9-2, C1-2, C6-3, C1-3, C8-4, C1-4); AN3C5A WAS AN3C4A (ZN C7-2, C1-2, C7-3, C1-3, C7-4, C1-4); D3849-047 WAS D3849-041 (ZN B3-4); ADD D3411-3 (ZN B3-4); ADD AN3C50A (ZN B3-4); $\phi 0.313$ WAS $\phi 0.328$ (B2-5, B2-6, C2-7, A8-7 & D7-8), REVISED NOTE 14 (ZN A8-7)	RF	09.06.30
D	NEW ISSUE	RF	09.03.30
REV.	DESCRIPTION	BY	DATE
DESIGN	ML	DART AEROSPACE USA, INC.	
DRAWN	RF	KENT, WA	
CHECKED	VS	DRAWING NO.	REV. D
MFG. APPR.	DD	D3905	SHEET 1 OF 8
APPROVED	HS	TITLE	SCALE
DE APPR.	DS	A119 FLOAT SKIDTUBE ASSY	NTS
DATE	14.08.08	COPYRIGHT © 2009 BY DART AEROSPACE USA, INC. THIS DOCUMENT IS PRIVATE AND CONFIDENTIAL AND IS SUPPLIED ON THE EXPRESS CONDITION THAT IT IS NOT TO BE USED FOR ANY PURPOSE OR COPIED OR COMBINED WITH ANY OTHER PERSON WITHOUT WRITTEN PERMISSION FROM DART AEROSPACE USA, INC.	

APPROVED



D3905-041 FLOAT SKIDTUBE ASSY WITH WEARPAD
(MAKE FROM D3905-11 SKIDTUBE)

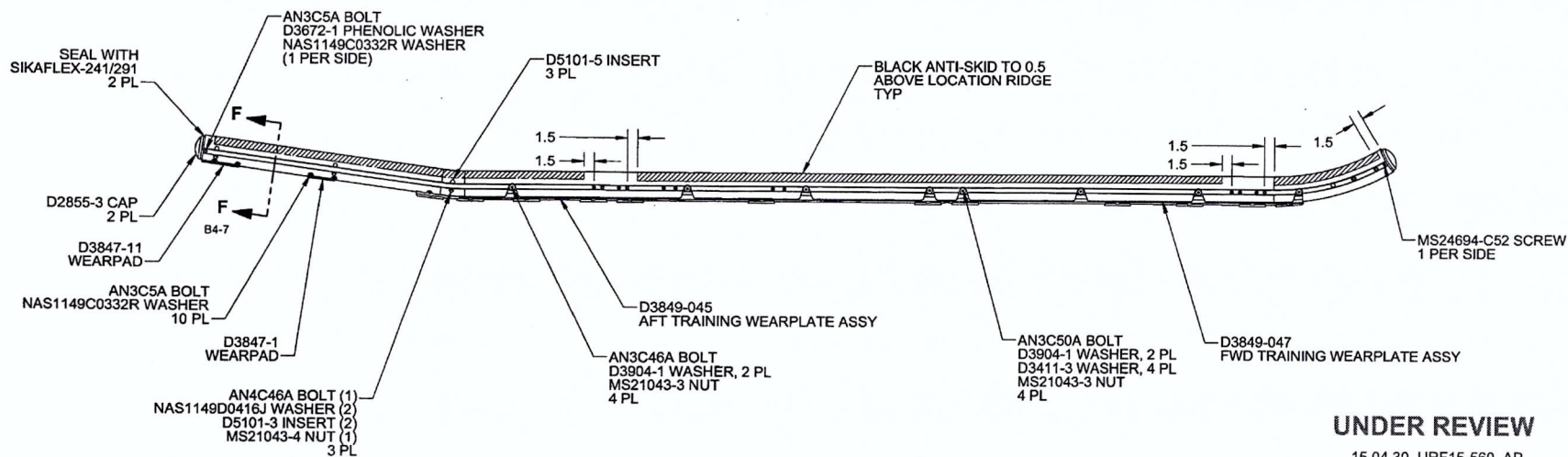
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D3905-045 FLOAT SKIDTUBE ASSY WITH TRAINING WEARPLATE
(MAKE FROM D3905-13 SKIDTUBE)

UNDER REVIEW

15.04.30 URF15-560 AP

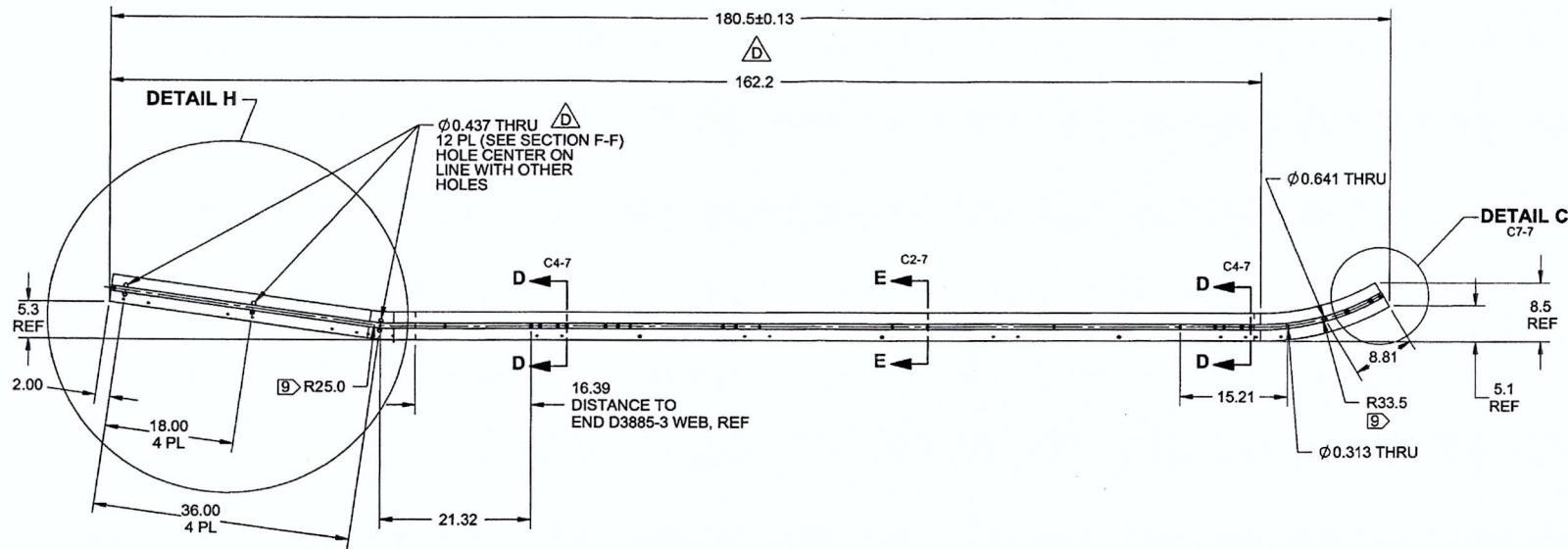
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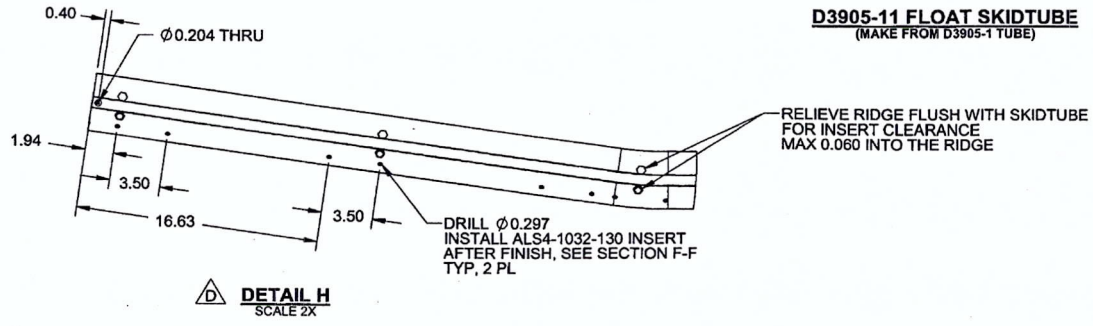
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D3905-11 FLOAT SKIDTUBE
(MAKE FROM D3905-1 TUBE)

UNDER REVIEW
15.04.30 URF15-560 AP

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2014 NOV 24

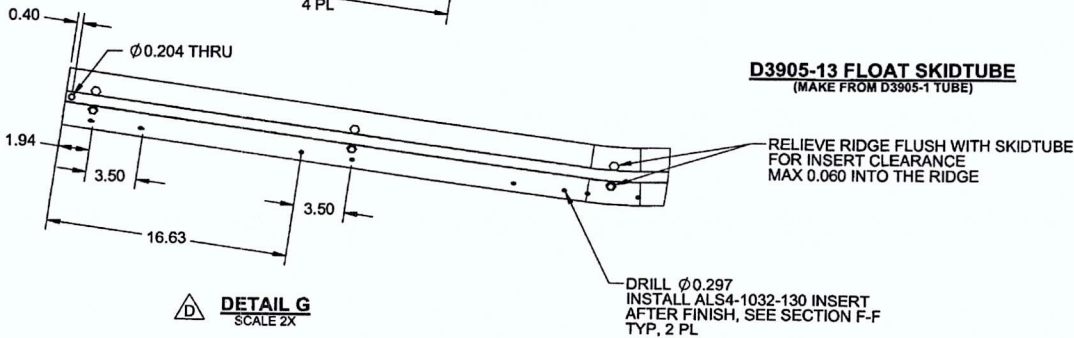
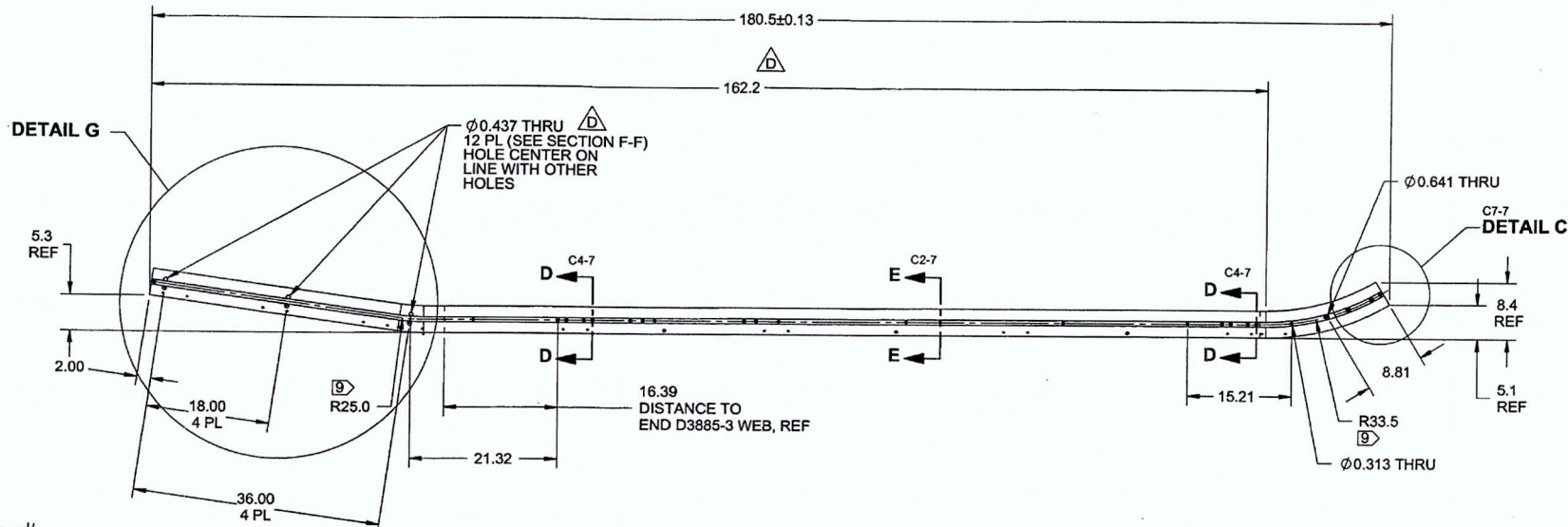


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	CHECKED	VS	DRAWING NO.	REV. D
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	APPROVED	HS	TITLE	SCALE
	DE APPR.	DS	A119 FLOAT SKIDTUBE ASSY	NTS
	DATE	14.08.08	COPYRIGHT © 2009 BY DART AEROSPACE USA, INC. THIS DOCUMENT IS PRIVATE AND CONFIDENTIAL AND IS SUPPLIED ON THE EXPRESS CONDITION THAT IT IS NOT TO BE USED FOR ANY PURPOSE OR COPIED OR COMMUNICATED TO ANY OTHER PERSON WITHOUT WRITTEN PERMISSION FROM DART AEROSPACE USA, INC.	

8 7 6 5 4 3 2 1

8 7 6 5 4 3 2 1

D C B A



D3905-13 FLOAT SKIDTUBE
(MAKE FROM D3905-1 TUBE)

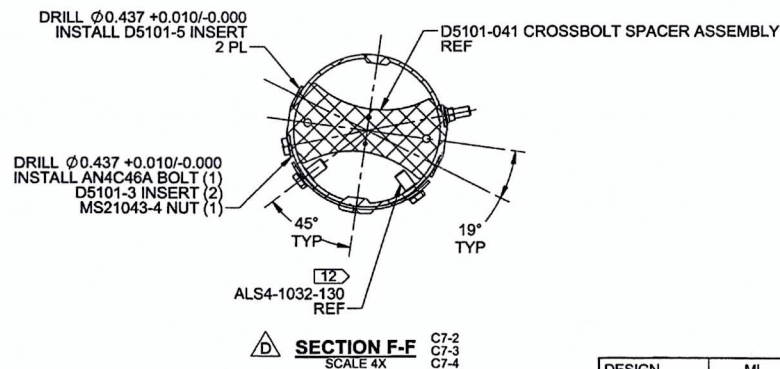
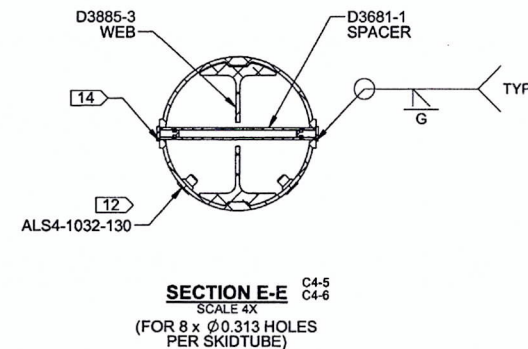
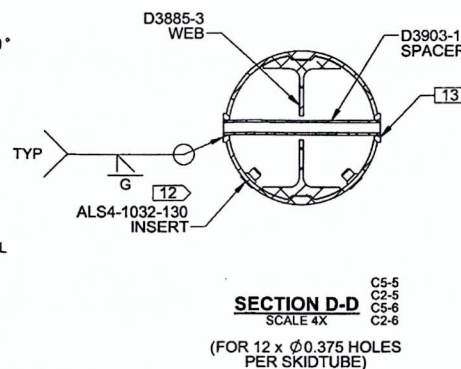
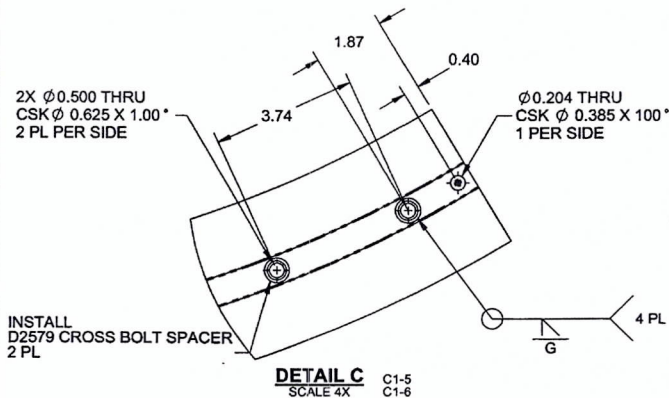
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15.04.30 URF15-560 AP

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2014 NOV 24

APPROVED	DESIGN	ML	DART AEROSPACE USA, INC.	
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	CHECKED	VS	DRAWING NO. D3905	REV. D
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	APPROVED	HS	SCALE	
	DE APPR.	DS	A119 FLOAT SKIDTUBE ASSY NTS	
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NOTES:

- 13) AFTER DRILLING AND BENDING ASSEMBLY
PERFORM THE FOLLOWING FOR Ø 0.375 HOLES ONLY:
i) CHAMFER HOLES Ø 0.475 x 45° (BOTH SIDES)
ii) INSERT D3903-1 SPACER
iii) WELD INTO PLACE AND GRIND FLUSH
iv) C-BORE TO 0.313 x 0.75 DEEP
v) DEBURR HOLES

- 14) AFTER DRILLING AND BENDING ASSEMBLY
PERFORM THE FOLLOWING FOR Ø 0.313 HOLES ONLY:
vi) CHAMFER HOLES Ø 0.354 x 45° OR 0.050 DEEP x 45° (BOTH SIDES)
vii) INSERT D3681-1 SPACER
viii) WELD INTO PLACE AND GRIND FLUSH
ix) DEBURR HOLES

UNDER REVIEW

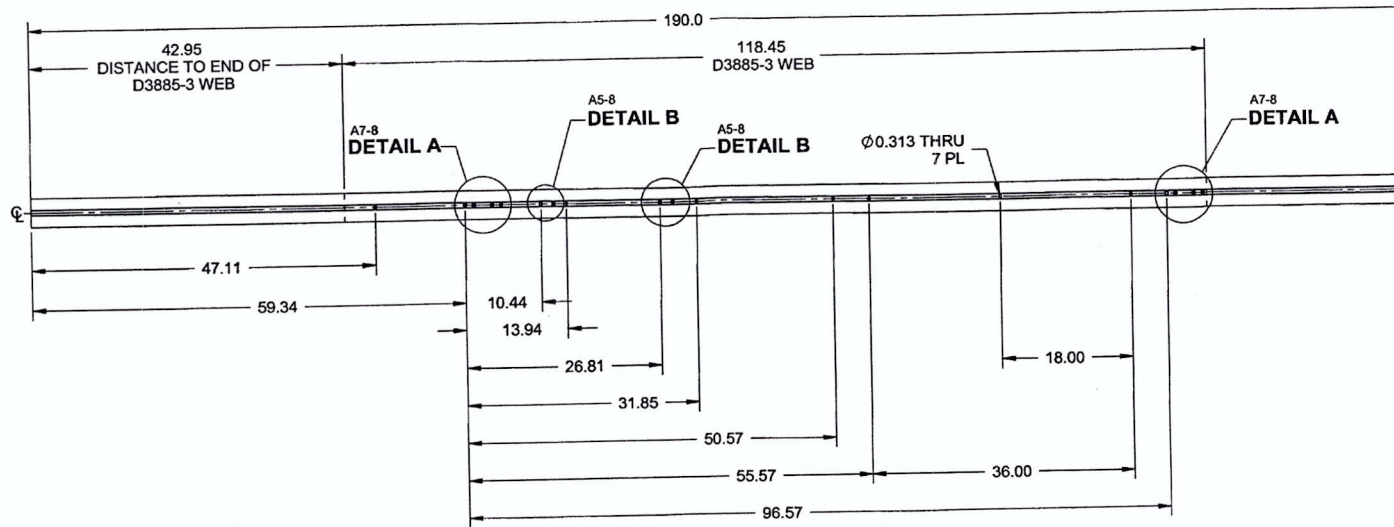
15.04.30 URF15-560 AP

RELEASED

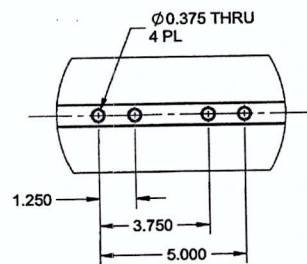
2014 NOV 24

APPROVED

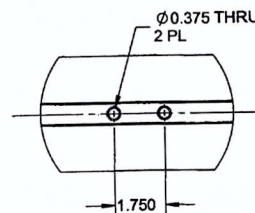
DESIGN	ML	DART AEROSPACE USA, INC.	
DRAWN	RF	KENT, WA	
CHECKED	VS	DRAWING NO.	REV. D
MFG. APPR.	DD	D3905	SHEET 7 OF 8
APPROVED	HS	TITLE	SCALE
DE APPR.	DS	A119 FLOAT SKIDTUBE ASSY	NTS
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D3905-1 TUBE
(MAKE FROM D2500-1-190 EXTRUSION)



DETAIL A
SCALE 4X
D6-8
D2-8



DETAIL B
SCALE 4X
D5-8
D4-8

UNDER REVIEW

15.04.30 URF15-560 AP

RELEASED

2014 NOV 24

APPROVED

DESIGN	ML	DART AEROSPACE USA, INC.	
DRAWN	RF	KENT, WA	
CHECKED	VS	DRAWING NO.	REV. D
MFG. APPR.	DD	D3905	SHEET 8 OF 8
APPROVED	HS	TITLE	SCALE
DE APPR.	DS	A119 FLOAT SKIDTUBE ASSY	NTS
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DART SERVICE INSTRUCTION

TO AMEND INSTALLATION INSTRUCTIONS IIN-D119-646 REV. B
AND INSTRUCTIONS FOR CONTINUED AIRWORTHINESS ICA-D119-646 REV. 1
REF FAA STC: SR02024SE
REF EASA STC: 10040294

1.0 PURPOSE:

Customers may have experienced spinning inserts on Dart D119-646-013/-014/-113/-114/-213/-214 float skid tubes. This DSI provides a repair for those spinning inserts.

2.0 INSTALLATION:

- 2.1 Remove AN4C6A Bolts securing the 604.0902 Float to the RH skid tube
- 2.2 Remove the 12 inserts from the skidtube extension.
- 2.3 Open the insert holes (12x) to 0.437" +0.010/-0.000. Deburr and alodine hole per MIL-DTL-5541
- 2.4 Remove AN3 bolts securing the D2855-3 Cap to the skidtube. Break/remove sealant between cap and skidtube and remove cap. Clean off residual sealant and inspect for corrosion damage per Dart ICA-D119-646 Chapter 5.
- 2.5 Using locally procured 1/4-20 UNC threaded rod attached to the D5101-041 Crossbolt Spacer, slide it into the skidtube.
- 2.6 Align the holes in the D5101-041 Crossbolt Spacer with the newly drilled holes in the skidtube. Some adjustment of the size of the spacer is permitted to fit it to the deepest set of holes.
- 2.7 Using the D5101-3 and D5101-5 inserts, secure the D5101-041 Crossbolt Spacer to the skidtube. Reference Figure 1. Remove the threaded rod. Torque inserts to 95-110 in.lbs (10-12 N-m).
- 2.8 Repeat steps 2.4-2.7 for the other 2 crossbolt spacer locations.
- 2.9 Reinstall D2855-3 Cap with AN3 bolts. Seal bolts with Sikaflex-241/-291 or Proseal 890 or MIL-S-8802 Class 'B2' sealant. Torque bolts to 15-25 in-lbs (1.7-2.8 N-m). Apply a bead of Sikaflex -241/-291 or Proseal 890 or MIL-S-8802 sealant between the cap and the skidtube.
- 2.10 Reinstall the 604.0902 Float onto the skidtube using 3x AN4C46A Bolts per Figure 1.
- 2.11 Repeat steps 2.1-2.10 for the LH skidtube.

3.0 PARTS LIST:

Qty. -011	PART NUMBER	DESCRIPTION
X	DSI 9685-011	CROSSBOLT SPACER KIT
6	D5101-041	CROSSBOLT SPACER ASSEMBLY
12	D5101-3	INSERT
12	D5101-5	INSERT
6	AN4C46A	BOLT
6	MS21043-4	NUT
24	NAS11490D0416J	WASHER

4.0 WEIGHT AND BALANCE

Incorporating this DSI causes the following weight and balance changes

Installation	Weight	LONGITUDINAL		LATERAL	
		Arm	Moment	Arm	Moment
DSI 9685-011 CROSSBOLT SPACER KIT	1.5 lb 0.68 kg	238.0 in 5.3 m	312 in-lb 3.6 kg-m	0.0 in 0.0 m	0.0 in-lb 0.0 kg-m

A	NEW ISSUE	AK	14.07.30
REV.	DESCRIPTION	BY	DATE
DESIGN	AK	DART AEROSPACE LTD HAWKESBURY, ONTARIO, CANADA	
DRAWN	AK		
CHECKED	HS	DRAWING NO.	
MFG. APPR.	JL	DSI 9685	
APPROVED		TITLE	
DE APPR.		CROSSBOLT SPACER KIT	
DATE	14.07.30	SCALE	
		NTS	
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REV. A
SHEET 1 OF 2

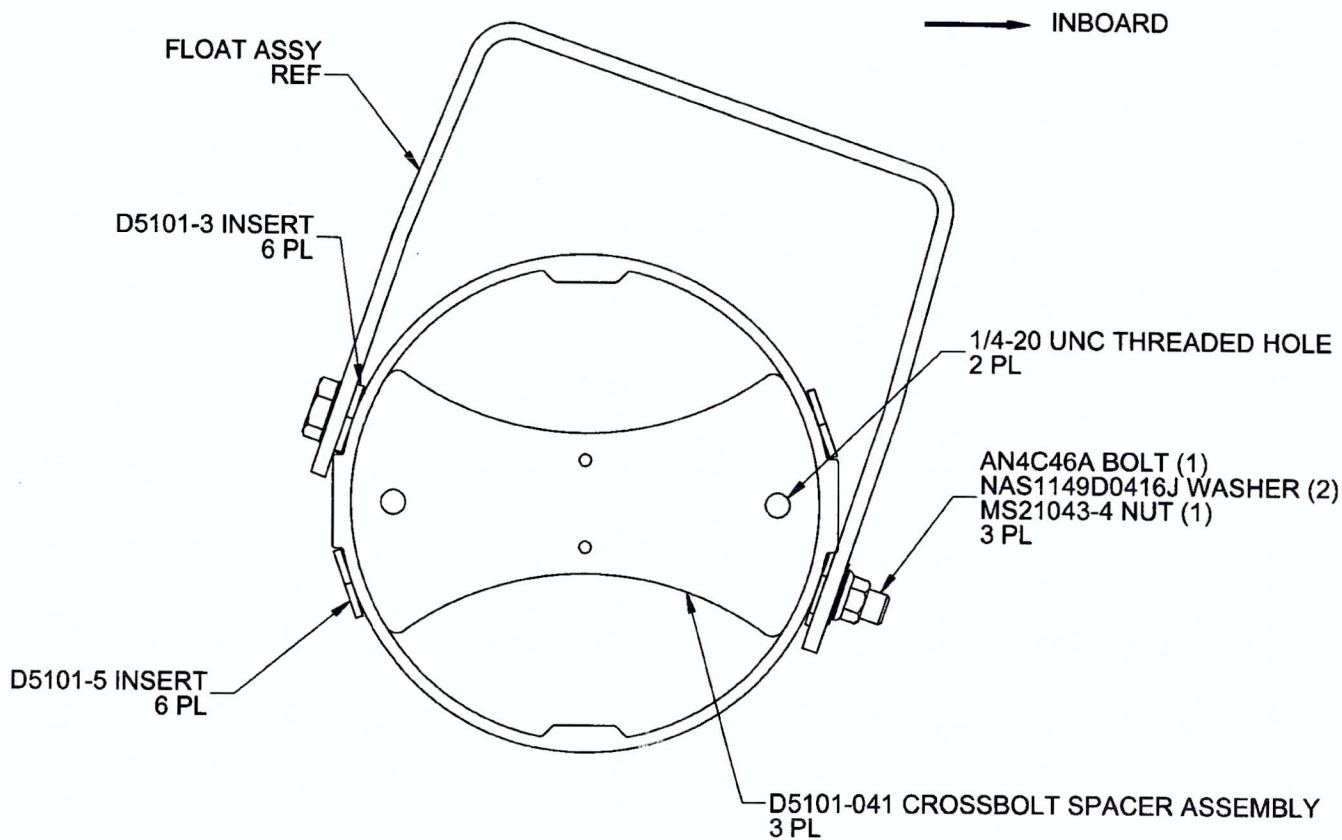
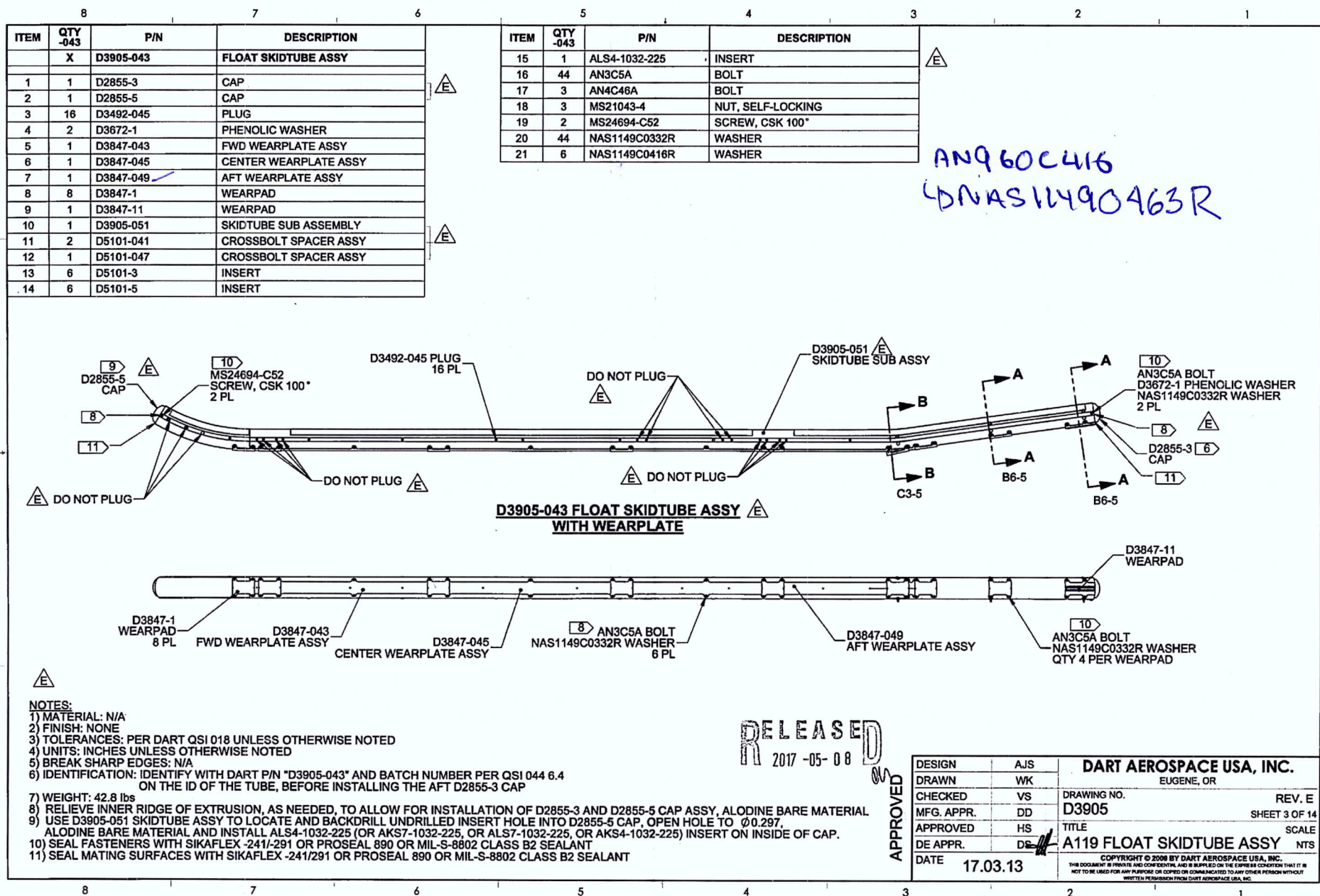


FIGURE 1: D5101-041 SPACER INSTALLATION

DESIGN	AK	DART AEROSPACE LTD HAWKESBURY, ONTARIO, CANADA	
DRAWN	AK		
CHECKED	HS	DRAWING NO.	REV. A
MFG. APPR.	JL	DSI 9685	SHEET 2 OF 2
APPROVED		TITLE	SCALE
DE APPR.		CROSSBOLT SPACER KIT	NTS
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Manufacturing Inc.

2056 County Rd #4, L'Original, Ontario K0b 1K0

Phone 613-675-1208

Fax 613-675-1250

PACKING SLIP

TO : DART AEROSPACE
1270 Aberdeen Street
Hawkesbury ON
K6A 1K7

Date : Aug 27/2015

SALESPERSON:		JOB #	PO NUMBER :	
		15-0354-22		
QTY ORDER	DESCRIPTION		QTY SHIP	LINE TOTAL
1	Decaper tuyaux aliminium		1 15/8/28 SD	

Client: (PRINT NAME) _____ (SIGNATURE) _____

THANK YOU FOR YOUR BUSINESS!

DQA: _____ Date: _____

WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: <u>129384</u> Part No. <u>D119-646-113</u> NCR No. _____	DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐	AGAINST DEPARTMENT/PROCESS <table style="width:100%;"> <tr> <td>Skid-tube ☐</td> <td>Crosstube ☐</td> <td>Water Jet ☐</td> <td>Engineering ☐</td> </tr> <tr> <td>Machining ☐</td> <td>Small Fab ☐</td> <td>Prod. Eng. Coord. ☐</td> <td>Quality ☐</td> </tr> <tr> <td>Thermoforming ☐</td> <td>Finishing ☐</td> <td>Rec/Store/Packaging ☐</td> <td>Other ☐</td> </tr> <tr> <td>Large Fab ☐</td> <td>Composite ☐</td> <td>Supplier ☐</td> <td></td> </tr> </table>	Skid-tube ☐	Crosstube ☐	Water Jet ☐	Engineering ☐	Machining ☐	Small Fab ☐	Prod. Eng. Coord. ☐	Quality ☐	Thermoforming ☐	Finishing ☐	Rec/Store/Packaging ☐	Other ☐	Large Fab ☐	Composite ☐	Supplier ☐	
Skid-tube ☐	Crosstube ☐	Water Jet ☐	Engineering ☐															
Machining ☐	Small Fab ☐	Prod. Eng. Coord. ☐	Quality ☐															
Thermoforming ☐	Finishing ☐	Rec/Store/Packaging ☐	Other ☐															
Large Fab ☐	Composite ☐	Supplier ☐																

Root Cause	Date	Step	Qty	Description of work order update or non-conformance	Initial Chief Eng	Action Description	Sign & Date	Verification	QC Inspector
Design	15.11.25		1	OPEN UP APT FLAT HOLES TO Ø0.465	A.P.	ACCEPTABLE		15-11-26	
Doc/Data				RELIEF OF RIDGE TO Ø0.190	15.11.25			15-11-26	
Equip/Tooling				INSTALL DS101-047 IN APT BEND REGION					
Handling/Pre				WEARPLATES WITH TEXTURED COATING REPLACES GASKETS					
Material				TOUCH UP A LUG LINE & FINISH					
Operator									
Offset/Setup									
Process									
Supplier									
Training									
Transport									
Unapproved									

FINISH**FAULT CATEGORY**

Landing Gear ☐ Bending ☐ Centre Not Concentric ☐ Cracks ☐ Crimp/Kink/Ripple/Wave ☐ Cuffs ☐ Crushing ☐ Heat Treat ☐ Inspection Strip in Tube ☐ Marks/Chatter ☐ Turning Sequence ☐ Wave/Twist in Tube	General ☐ Bend ☐ BOM/Route ☐ Broken/Damage/Defect ☐ Burrs ☐ Contamination ☐ Countersink ☐ Cut Too Short ☐ Drawing ☐ Drill Holes ☐ Finish ☐ Fit/Function	☐ Folio/Program ☐ Grain ☐ Hardware ☐ Inspection Incomplete/Unqualified ☐ Instructions Incomplete/Unclear ☐ Misaligned/off center ☐ Mislabeled ☐ Misread ☐ Off-set ☐ Out of Calibration ☐ Out of Sequence	☐ Outside Dimensions ☐ Over/Under tolerance ☐ Part Incorrect ☐ Part Lost/Missing ☐ Part Moved ☐ Positioned Wrong ☐ Power Loss/Surge ☐ Pressure/Forced ☐ Set-up ☐ Temperature/Cure ☐ Weld ☐ Wrong Stock Pulled ☐ Other
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DQA: _____ Date: _____

WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: _____ Date: _____

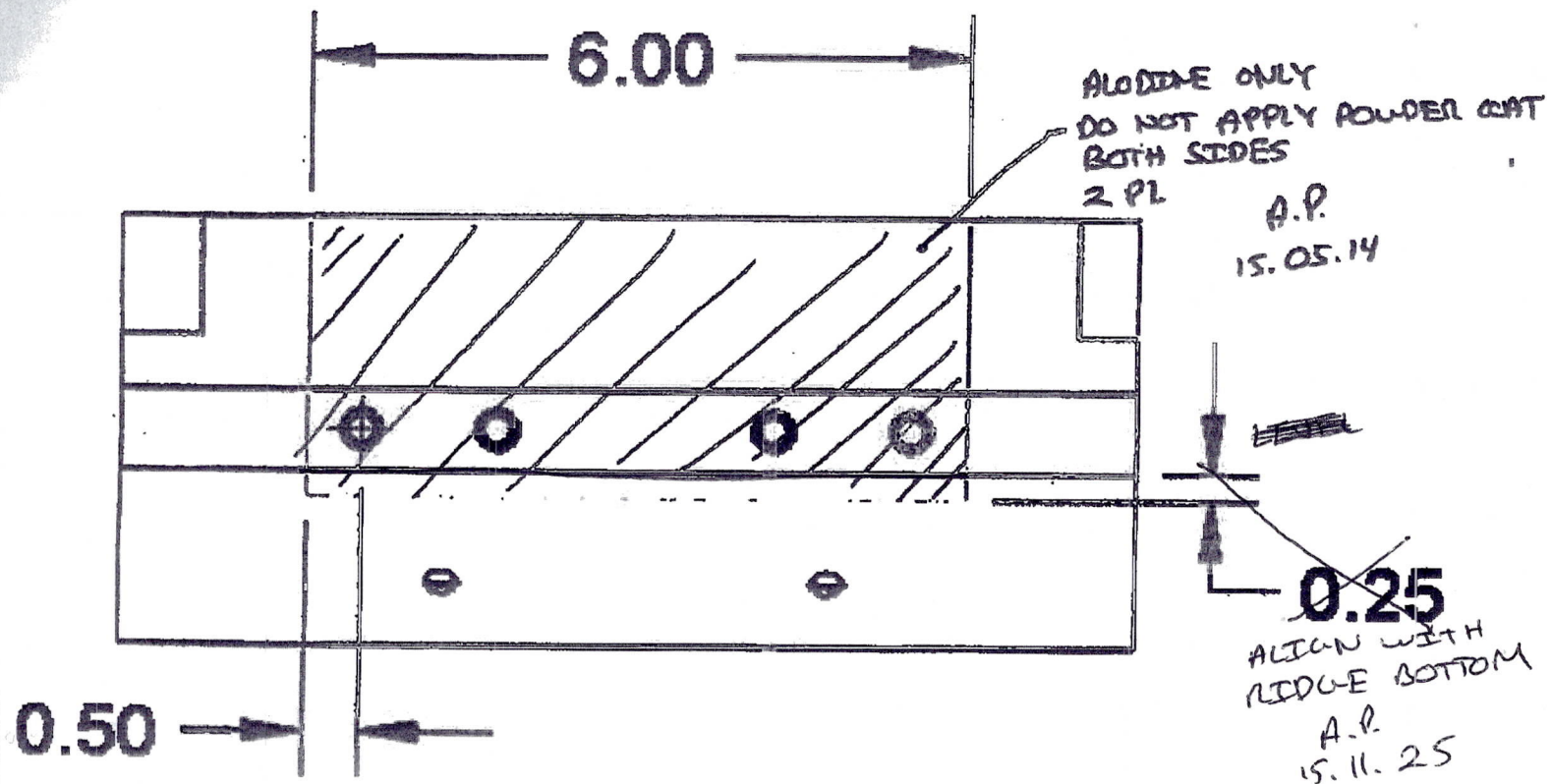
Work Order update only ☐

Work Order: <u>129384</u> Part No. <u>D119-646-113</u> NCR No. _____	DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐	AGAINST DEPARTMENT/PROCESS <table style="width:100%;"> <tr> <td>Skid-tube ☐</td> <td>Crosstube ☐</td> <td>Water Jet ☐</td> <td>Engineering ☐</td> </tr> <tr> <td>Machining ☐</td> <td>Small Fab ☐</td> <td>Prod. Eng. Coord. ☐</td> <td>Quality ☐</td> </tr> <tr> <td>Thermoforming ☐</td> <td>Finishing ☐</td> <td>Rec/Store/Packaging ☐</td> <td>Other ☐</td> </tr> <tr> <td>Large Fab ☐</td> <td>Composite ☐</td> <td>Supplier ☐</td> <td></td> </tr> </table>	Skid-tube ☐	Crosstube ☐	Water Jet ☐	Engineering ☐	Machining ☐	Small Fab ☐	Prod. Eng. Coord. ☐	Quality ☐	Thermoforming ☐	Finishing ☐	Rec/Store/Packaging ☐	Other ☐	Large Fab ☐	Composite ☐	Supplier ☐	
Skid-tube ☐	Crosstube ☐	Water Jet ☐	Engineering ☐															
Machining ☐	Small Fab ☐	Prod. Eng. Coord. ☐	Quality ☐															
Thermoforming ☐	Finishing ☐	Rec/Store/Packaging ☐	Other ☐															
Large Fab ☐	Composite ☐	Supplier ☐																

Root Cause		Date	Step	Qty	Description of work order update or non-conformance	Initial Chief Eng	Action Description	Sign & Date	Verification	QC Inspector
Design		15.11.25		1	NO POWDER COAT, PRIME / PAINT. DO NOT APPLY PRIME PAINT IN SADDLE RECDNS PER ATTACHED	A.P. 15.11.25	ACCEPTABLE			
Doc/Data										
Equip/Tooling										
Handling/Pre										
Material										
Operator										
Offset/Setup										
Process										
Supplier										
Training										
Transport										
Unapproved										

FAULT CATEGORY

Landing Gear ☐ Bending ☐ Centre Not Concentric ☐ Cracks ☐ Crimp/Kink/Ripple/Wave ☐ Cuffs ☐ Crushing ☐ Heat Treat ☐ Inspection Strip in Tube ☐ Marks/Chatter ☐ Turning Sequence ☐ Wave/Twist in Tube	General ☐ Bend ☐ BOM/Route ☐ Broken/Damage/Defect ☐ Burrs ☐ Contamination ☐ Countersink ☐ Cut Too Short ☐ Drawing ☐ Drill Holes ☐ Finish ☐ Fit/Function	☐ Folio/Program ☐ Grain ☐ Hardware ☐ Inspection Incomplete/Unqualified ☐ Instructions Incomplete/Unclear ☐ Misaligned/off center ☐ Mislabeled ☐ Misread ☐ Off-set ☐ Out of Calibration ☐ Out of Sequence
		☐ Outside Dimensions ☐ Over/Under tolerance ☐ Part Incorrect ☐ Part Lost/Missing ☐ Part Moved ☐ Positioned Wrong ☐ Power Loss/Surge
		☐ Pressure/Forced Set-up ☐ Temperature/Cure ☐ Weld ☐ Wrong Stock Pulled ☐ Other



Work Order ID 129384

129384

March-03-15 7:49:58 AM

Page 1

Item ID: D119-646-113 Accept ***N900040100*** Setup Start ***NS1***
 Revision ID: Stop ***NS2***
 Item Name: Skidtube LH with Wearplates & Wearpads, DART (Apical) Tri-Bag Float Compatible
 Start Date: 2/05/15 Start Qty: 1.00 ***1*** Cust Item ID:
 Required Date: 2/06/15 Req'd Qty: 1.00 ***1*** Customer:
 Reference: ECN 14-628

Approvals: Process Plan: Date: Tooling: Date: Run Start ***NR1***
 QC: Date: SPC (Y/N): Date: Stop ***NR2***

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
Draw Nbr	Revision Nbr								
IIN-D119-646	C								

105 0.00

105

Packaging

Packaging

Memo

PULL FROM STOCK
D119-646-113 X1
B: 92607

ADD DSI 9685-011
AS PER ECN 14-628

0.00

DP 15-2-27

108 0.00

108

Skidtubes

Skidtubes

Memo

REWORK PER RS1015
A/R

0.00

DP 15-3-5
BE

DART Dart Aerospace Ltd. 1270 ABERDEEN ST. HAWKESBURY ON CANADA K6A 1K7		TC APPROVAL # 09-89 TEL: 1-613-632-5200	
P.N.	D119-646-113	CHG	CHG003
DESC	Float Skidtube, LH	STC	SR02024SE
LOT	B92607	STC	
MODEL	Agusta A119/AW119MKII	STC	

DATE: 03-15-15 BY: [Signature] MADE IN: CANADA D2729-2

Handwritten notes:
✓ 02024
82429
L 82620